The Solution of the Problem of Stationary Heat Conductivity for a Plane With n-Elliptical Openings

the problems which were solved by G.M. Goluzin [Ref 2] for a plane with circular openings. The author thanks A.M. Rodov for the formulation of the problem and advices.
There are 5 Soviet references.

ASSOCIATION: Belorusskiy gosudarstvennyy universitet imeni V.I. Lenina (Belorussian State University imeni V.I. Lenin), Minsk

MATSKEVICH, I.P.

Solution to Dirichlet's problem for a body bounded by a finite number of ellipsoids of revolution. Dokl.AN BSSR 4 no. 5:190-193 My '60. (MIRA 13:11)

1. Smolenskiy pedagogicheskiy institut im. Karla Marksa. Predstavleno akademikom AN BSSR V.I. Krylovym.
(Linear equations)

MATSKEVICH, I.P.

Solution of Dirichlet's problem for the Laplace equation for a plane limited region bounded by ellipses. Uch. zap. Smol. gos. ped. inst. No.10:62-66 '62. (MIRA 17:1)

ACCESSION NR: AP4039326 S/0250/64/008/004/0209/0212

AUTHOR: Matskevich, I. P.

TITLE: Solution of a boundary value problem for the biharmonic equation for the half plane with m elliptic apertures (Presented by N. P. Yerugin, Academician of the AN BSSR)

SOURCE: AN BSSR. Doklady*, v. 8, no. 4, 1964, 209-212

TOPIC TAGS: boundary value problem, biharmonic equation, half plane, elliptic aperture, normal derivative

ABSTRACT: The author is interested in solving the biharmonic equation in a region D with a finite number of elliptical openings. In D and on its boundary, the function U must be continuous together with its partial derivatives of first order, and inside D, ΔU and $\partial \Delta U / \partial \xi_i$ are bounded and the partial derivatives of fourth order are continuous and $\Delta^2 U = 0$. The function U must satisfy

$$\frac{\partial U}{\partial \xi_i} = \sum_{k=0}^{\infty} a_{ik} \cos k\eta_i + \bar{a}_{ik} \sin k\eta_i, \qquad (1)$$

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ACCESSION NR: AP4039326

$$\left.\frac{\partial U}{\partial \xi_j}\right|_{\xi_j=0} = \sum_{k=0}^{\infty} a_{jk}\cos k\eta_j + \bar{a}_{jk}\sin k\eta_j. \qquad (2)$$

He proves a uniqueness theorem and actually constructs the solution of the problem, together with error term, when the coefficients in (1) and (2) go to zero at a sufficiently rapid rate. "In conclusion the author expresses his unbounded gratitude to A. M. Rodov for the statement of the problem and his attention to the work." Orig. art. has: 14 formulas.

ASSOCIATION: Belorusskiy institut narodnogo khozyaystva imeni V. V. Kuybyshseva (Belorussian Institute for National Economy)

SUBMITTED: 24Apr63 DATE ACQ: 09Jun64 ENCL: 00

SUB CODE: MA NO REF SOV: 002 OTHER: 000

Card 2/2

MAISHEVICH, A. F.

AMDON'YEV, V.L.; BAUM, V.A.; BAUMGARTEN, N.K.; BEREZIN, V.D.; BIRYUKOV, I.K.; BIRYUKOV, S.M.; BLOKHIN, S.I.; BOROVOY, G.A.; BULEV, M.Z.; BURAKOV, N.A.; VERTSAYZER, B.A.; VOVK, G.M.; VOKMAN, B.A.; VOSHCHININ, A.P.; GALAKTIONOV, V.D., kand. tekhn. nauk; GENKIN, Ye.M.; GIL'DENBLAT, Ya.D., kand. tekhn. nauk; GINZBURG, N.M.; GLEBOV, P.S.; GODES, E.G.; GORBACHEV, V.N.; GRZHIB, B.V.; GRIGOLOV, L.P., kand. s.-kh. nauk; GRODZENSKAYA, I.Ya.; DANILOV, A.G.; DMITRIYEV, I.G.; DMITRIYENKO, Ya.D.; DOBROKHOTOV, D.D.; DUBININ, L.G.; DUNDUKOV, M.D.; ZHOLIK, A.P.; ZENKEVICH, D.K.; ZIMAREV, Ye.V.; ZIMASKOV, S.V.; ZUBRIK, K.M.; KARANOV, I.P.; KNYAZEV, S.N.; KOLEGAYEV, N.M.; KOMAREVSKIY, V.T.; KOSENKO, V.P.; KOSHELISTOV, D.V.; KOSTROV, I.N.; KOTLYARSKIY, D.M.; KRIVSKIY, M.N.; KUZNETSOV, A.Ya.; LAGAR'KOV, N.I.; LGALOV, V.G.; LIKHACHEV, V.P.; LOGUNOV, P.I.; MATSKEVICH, K.F.; MEL'NICHENKO, K.I.; M [illegible]EVICH, I.R.; MIKHAYLOV, A.V., kand. tekhn. nauk; MUSIYEVA, R.N.; NATANSON, A.V.; NIKITIN, M.V.; OVES, I.S.; OGUL'NIK, G.R.; OSIPOV, A.D.; OSMER, N.A.; PETROV, V.I.; PEVYSHKIN, G.A., prof.; P'YANKOVA, Ye.V.; RAPOPORT, Ya.D.; REMEZOV, N.P.; ROZANOV, M.P., kand. biol. nauk; ROCHEGOV, A.G.; RUBINCHIK, A.M.; RYBCHEVSKIY, V.S.; SADCHIKOV, A.V.; SEMENTSOV, V.A.; SIDENKO, P.M.; SINYAVSKAYA, V.T.; SITAROVA, M.N.; SOSNOVIKOV, K.S.; STAVITSKIY, Ye.A.; STOLYAROV, B.P. [deceased]; SUDZILOVSKIY, A.O.; SYRTSOVA, Ye.D., kand. tekhn. nauk; FILIPPSKIY, V.P.; KHALTURIN, A.D.; TSISHEVSKIY, P.M.; CHEKKASOV, M.I.; CHERNYSHOV, A.A.; CHUSOVITIN, N.A.; SHESTOPAL, A.O.; SHEKHTER, P.A.; SHISHKO, G.A.; SHCHEGLOVA, I.N.; EGEL', F.F.; YAKOBSON, A.G.; YAKUBOV, P.A., ARKHANGEL'SKIY,

(Continued on next card)

AKDON'YEV, V.L.... (continued) Card 2.
Ye.A., retsenzent, red.; AKHUTIN, A.N., retsenzent, red.; BALASHOV, Yu.S., retsenzent, red.; BARABANOV, V.A., retsenzent, red.; BATUNER, P.D., retsenzent, red.; BORODIN, P.V., kand. tekhn. nauk, retsenzent, red.; VALUTSKIY, I.I., kand. tekhn. nauk, retsenzent, red.; GRIGOR'YEV, V.M., kand. tekhn. nauk, retsenzent, red.; GUBIN, M.F., retsenzent, red.; GUDAYEV, I.N., retsenzent, red.; YERMOLOV, A.I., kand. tekhn. nauk, retsenzent, red.; KARAULOV, B.F., retsenzent, red.; KRITSKIY, S.N., doktor tekhn. nauk, retsenzent, red.; LIKIN, V.V., retsenzent, red.; LUKIN, V.V., retsenzent, red.; LUSKIN, Z.D., retsenzent, red.; MATRIOSOV, A.Kh., retsenzent, red.; MENDELEYEV, D.M., retsenzent, red.; MENKEL', M.F., doktor tekhn. nauk, retsenzent, red.; OBRUCHKOV, S.S., retsenzent, red.; PETRASHEN', P.F., retsenzent, red.; POLYAKOV, L.M., retsenzent, red.; RUMYANTSEV, A.M., retsenzent, red.; RYABCHIKOV, Ye.I., retsenzent, red.; STASENKOV, N.G., retsenzent, red.; TAKANAYEV, P.F., retsenzent, red.; TARANOVSKIY, S.V., prof., doktor tekhn. nauk, retsenzent, red.; FIZDEL', I.R., retsenzent, red.; FEDOROV, Ye.M., retsenzent, red.; SHEVYAKOV, M.N., retsenzent, red.; SHMAKOV, M.I., retsenzent, red.; ZHUK, S.Ya. [deceased], akademik, glavnyy red.; FILSO, G.A., kand. tekhn. nauk, red.; FILIMONOV, N.A., red.; VOLKOV, L.N., red.; GRISHIN, M.M., red.; ZHURIN, V.D., prof., doktor tekhn. nauk, red.; KOSTROV, I.N., red.; LIKHACHEV, V.P., red.; MEDVEDEV, V.M., kand. tekhn. nauk, red.; MIKHAYLOV, A.V., kand. tekhn. nauk, red.; PETROV, G.D., red.; RAZIN, M.V., red.; SOBOLEV, V.P., red.; FERINGER, B.P., red.; FREYGOFER,

(Continued on next card)

AKDON'YEV, V.L.... (continued) Card 3.
Ye.F., red.; TSYPLAKOV, V.D. [deceased], red.; KORABLINOV, P.N., tekhn. red.; GRIKIN, Ye.M., tekhn. red.; KACHEROVSKIY, N.V., tekhn. red.

[Volga-Don; technical account of the construction of the V.I. Lenin Volga-Don Navigation Canal, the TSimlyansk Hydroelectric Center, and irrigation systems] Volgo-Don; tekhnicheskii otchet o stroitel'stve Volgo-Donskogo sudokhodnogo kanala imeni V.I. Lenina, TSimlianskogo gidrouzla i orositel'nykh sooruzhenii, 1949-1952; v piati tomakh. Moskva, Gos. energ. izd-vo. Vol.1. [General structural descriptions] Obshchee opisanie sooruzhenii. Glav. red. S.IA. Zhuk. Red. toma M.M. Grishin. 1957. 319 p. Vol.2. [Organization of construction. Specialized operations in hydraulic engineering] Organizatsiia stroitel'stva. Spetsial'nye gidrotekhnicheskie raboty.

(Continued on next card)

ANDON'YEV, V.L.... (continued) Card 4.
Glav. red. S.IA. Zhuk. Red. toma I.N. Kostrov. 1958. 319 p.
(MIRA 11:9)

1. Russia (1923- U.S.S.R.) Ministerstvo elektrostantsii. Byuro tekhnicheskogo otcheta o stroitel'stve Volgo-Dona. 2. Chlen-korrespondent Akademii nauk SSSR (for Akhutin). 3. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury SSSR (for Grishin, Razin).

(Volga Don Canal--Hydraulic engineering)

MATSKEVICH, L.

Small sections of Minsk. Hab. i sial. 35 no.4:7-8 Ap '59.
(MIRA 12:12)

1.Glavnyy arkhitektor Minska.
(Minsk--City planning)

MATSKEVICH, L.M., inzhener.

Time norms for planning major construction work. Suiestroenie 22 no.5: 36-39 My '56. (MLRA 9:9)
(Industrial buildings) (Work measurement)

MATSKEVICH, L. N.

MATSKEVICH, L. N. Rewinding of Rotors of Three-Phase Induction Motors for Operation at a Changed Speed (peremotka Fazovykh Rotorov pri Izmenenii Chisla Oborotov Trekhfaznykh Asinkhronnykh Elektrodvigateley), pp. 11-13

Using same basic formulae the author presents calculations for some particular cases of rotor rewinding. (formulae, diagrams and drawings).

SO: PROMYSHLENNAYA ENERGETIKA, No. 11, Nov. 1952, Moscow (1613006)

MATSKEVICH, L.N., inzh.

Double-core current transformer for a transistorized contactless protection system. Elektrotekhnika 36 no.4:18-19 Ap '65.
(MIRA 18:5)

MATSKEVICH, L.N., inzh.

Methods for measuring 10% multiples of current transformers.
Elektrotekhnika 36 no.3:40-43 Mr '65. (MIRA 18:6)

BISENBAUM, I.Ya.; URMAN, V.O.; KHAREVICH, M.I.; ROTER, N.A.; TOLOCHKO, V.V., red.; MATSKEVICH, L.P., red.; ALEKSEYEV, A.N., red.

[Minsk; concise address-handbook as of October 1, 1959] Minsk; kratkaia adresno-spravochnaia kniga. Po sostoianiiu na 1 oktiabria 1959 g. Minsk, 1960. 247 p. (MIRA 13:3)

1. Minskaya gorodskaya spravochno-informatsionnaya kontora "Mingorspravka."
(Minsk--Directories)

MATSKEVICH, M.A.

Control of tree and shrubbery pests in the fall. Gor.khoz.Mosk. 28 no.9:28-30 S '54. (MLRA 7:10)
(Trees--Diseases and pests)

158080

S/081/62/000/011/045/057
B202/B192

AUTHORS: Vlasova, K.N., and Matskevich, M.K.

TITLE: Polyamide resins

PERIODICAL: Referativnyy zhurnal, Khimiya, no.11, 1962, 591, abstract 11 P 63. (In the Symposium: "Plastmassy v mashinostr." ("Plastics in Machinery"), M., Mashgiz, 1959, 19-28).

TEXT: Mechanical and dielectric properties of the indigenous polyamide resins designated for constructions and also polyamide resins used as varnishes, laminates, films and glues, are described. Methods of processing polyamide resins and the fields of their application are briefly described.

[Abstractor's note: Complete translation.]

Card 1/1

MATSKEVICH, M.M.

Conditions determining the development of the middle Jurassic formation in the platform area of eastern Ciscaucasia. Trudy Gros. NII no.8:30-39 '60. (MIRA 13:8)
(Caucasus, Northern--Geology, Stratigraphic)

MATSKEVICH, M.M.

Tectonic pattern of steppes in eastern Ciscaucasia. Trudy Groz. NII no.8:112-126 '60. (MIRA 13:8)
(Caucasus, Northern--Geology, Structural)

VASIL'YEV, V.G.; MERZLENKO, Yu.F.; MATSKEVICH, M.M.; ZHIVAGO, N.V.; LI CHZHAO-ZHEN' [Li Chao-Jen]; GOLYAKOV, V.A.; SHABATIN, I.V.; BORISENKO, Ye.M.; MIROSHNIKOV, M.V.; USPENSKAYA, N.Yu.; KHEL'KVIST, V.G.; GRATSIANOVA, O.P.; BUDNIKOV, N.B.; BELOV, K.A.; MAKSIMOV, S.P.

Discussion. Trudy VNIGNI no.32:282-336 '60. (MIRA 14:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut prirodnogo gaza (for Vasil'yev, Zhivago, Khel'kvist). 2. Neftepromyslovoye upravleniye Stavropol'neft' (for Merzlenko). 3. Groznenskiy nauchnoissledovatel'skiy neftyanoy institut (for Matskevich). 4. Moskovskiy institut neftekhimicheskoy i gazovoy promyshlennosti im. I.M. Gubkina (for Li Chzhao-zhen', Uspenskaya). 5. Stavropol'skiy filial Groznenskogo nauchnoissledovatel'skogo neftyanogo instituta (for Golyakov, Shabatin, Borisenko, Miroshnikov). 6. Ministerstvo geologii i okhrany nedr SSSR (for Gratsianova, Budnikov). 7. Glavnyy geolog neftyanogo i gazovogo upravleniya Stavropol'skogo sovnarkhoza (for Belov).

(Caucasus, Northern--Petroleum geology)
(Caucasus, Northern--Gas, Natural--Geology)

MATSKEVICH, M.M.; BOBUKH, V.A.

Stratigraphic cross section of the Jurrasic sediments of the Kerpinskiy swell. Neftegaz. geol. i geofiz. no.4:22-27 '64.
(MIRA 17:6

1. Groznenskiy neftyanoy nauchno-issledovatel'skiy institut.

MATSKEVICH, N.D.; CHETAYEVA, V.G.

Treatment of a congenital dislocation of the hip in newborn infants. Trudy Ukr. nauch. - issl. inst. ortop. i travm. no.15:95-100 '59 (MIRA 16:12)

1. Iz Ukrainskogo nauchno-issledovatel'skogo instituta ortopedii i travmatologii imeni prof. M.I.Sitenko (dir. - chlen-korrespondent AMN SSSR prof. N.P.Novachenk).

MATSKEVICH

Results of surgical treatment of pathological dislocations of the hip following infantile coxitis. Trudy Ukr. nauch.-issl. inst. ortop. i travm. no.15:33-40 '59 (MIRA 16:12)

1. Iz Ukrainskogo nauchno-issledovatel'skogo instituta ortopedii i travmatologii imeni prof. M.I.Sitenko(dir. - chlen korrespondent AMN SSSR, prof. N.P.Novachenko).

MATSKEVICH, N.D.

Modern methods for treating pathological dislocations of the hip after noninfectious coxitis; survey of foreign literature. Ortrop. travm.i protez. 21 no.5:81-86 My '60. (MIRA 13:9)
(HIP JOINT—DISLOCATION)

MATSKEVICH, N.D.

Clinical and roentgenological characteristics of sarcoma of the bone in childhood. Ortop., travm.i protez. no.10:20-24 '61. (MIRA 14:10)

1. Iz Ukrainskogo nauchno-issledovatel'skogo instituta ortopedii i travmatologii im. M.I. Sitenko (dir. - chlen-korrespondent AMN SSSR prof. N.P. Novachenko).
(BONES--CANCER)

YENGALYCHEVA, N.A., kand. med. nauk; ; MATSKEVICH, N.D.

Metaphysical punctate dysostosis. Ortop. travm. protez. 24 no.7:19-23 Jl '63 (MIRA 17:2)

1. Iz Ukrainskogo instituta ortopedii i travmatologii imeni M.I.Sitenko (dir. - chlen-korrespondent AMN SSSR prof. N.P. Novachenko).

MATSKEVICH, N. V.

"The Accumulation of Gutta-Percha in the Bark of the Above-Ground Stems of the Spindle Tree." Cand Biol Sci, Inst of Forestry, Acad Sci USSR. (VM, 21 Dec 54)

Survey of Scientific and Technical Dissertations Defended at USSR higher Educational Institutions (12)
SO: Sum. No. 556, 24 Jun 55

KOSHCHEYEV, A.L. [deceased]; MATSKEVICH, N.V.

Effect of growing conditions and cultivation practices on the rooting of spindle tree layers. Trudy Inst. lesa 46:61-64 '58. (MIRA 11:6)

1. Institut lesa Akademii nauk SSSR.
(Spindle tree) (Plant propagation)

COUNTRY : USSR
CATEGORY : Cultivated Plants. Industrial. Oleiferous. M
Sugar.
ABS. JOUR. : RZhBiol., No. 3, 1959, No. 11033

AUTHOR : Matskevich, N. V.
INST. : Forestry Institute. AS USSR
TITLE : Accumulation of Gutta-percha in the Bark of Layered Stems of the Spindle Tree.

ORIG. PUB. : Tr. In-ta lesa, AN SSSR, 1958, 46, 65-117

ABSTRACT : In the experiments conducted in different natural areas of the occurrence of spindle tree (Moscow and Penza oblasts, Bashkir Autonomous SSR), there was studied the effectiveness of layering the young shoots of the spindle tree for the accumulation of gutta-percha in them. For layering, the shoots from the base of the crown were laid in small trenches and covered with a layer of soil of 10-12 cm almost to the tip. The analysis of 2000 layered stems showed that layering secures a considerable rise in the accumulation of gutta-percha in the stems. Also

CARD: 1/2

COUNTRY :
CATEGORY :

ABS. JOUR. : RZhBiol., No. 1959, No. 11033

AUTHOR :
INST. :
TITLE :

ORIG. PUB. :

ABSTRACT : studied were: the influence of the duration of layering, of the size of the stems, their age and other factors on the accumulation of gutta-percha, the effectiveness of the layering of the stems of the verrucose and European spindle tree, the influence of the conditions of habitat on the gutta-percha accumulation of the layered stems of the spindle tree and also the relationship of the gutta-percha accumulation and the scientific agricultural measures. Bibliography of 113 titles. -- A. G. Vereshchagin

CARD: 2/2

17(4), 30(1)

SOV/20-126-1-50/62

AUTHOR: Matskevich, N. V.

TITLE: Experimental Polyploidy of Populus tremula L.
(Eksperimental'naya poliploidiya v Populus tremula L.)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 1, pp 183-186 (USSR)

ABSTRACT: The experiments with wood plants according to the colchicine-method were among others made for the purpose of finding highly productive forms to be used in forestry (Ref 3). Despite of failures due to several concrete reasons, some special achievements can be used not only for theoretical generalizations, but also for practical utilization (Refs 4,5). The present examinations (supervision: Prof. L. F. Pravdin) were meant to produce artificial polyploids by means of the colchicine-effect on seeds of Populus tremula, Populus balsamifera, Euonymus europaea, Quercus robur, and others. The concentration of the alkaloid concerned was 0.007-0.1% for populus tremula. The seeds were put into this solution of 25-26° to germinate for 5-20 hours, after that they were "colchicine-washed", and the seeds then put into a culture medium. The colchicine-influence

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Experimental Polyploidy of Populus tremula L. SOV/20-126-1-50/62

became appearant parallel with the development of the germs: the growth of the germs was considerably hampered (Fig 1), primary root and primary stem were swollen up, i.e. thickened. A characteristic feature of the treated germs was the red pigmentation in the form of thin veins starting from the knee below the cotyledons. Later on these seedlings had larger and thicker terminal buds as well as larger cotyledons, and still, later on, real and larger leaves. Among the seedlings of Populus tremula and Populus balsamifera changed under the colchicine influence, the following 3 categories of plants could be sorted out already in the first year: 1) Plants of extremely different shape: strangely narrow leaves with a cogged and unsymmetrical lamina. They were similar to aneuploids (plants with non-divisible changes of their number of chromosomes). 2) Plants which the author classified as "myxoploids" or "chimaeras". They consist of normal, diploid and changed polyploid cells and textures. In their external shape these plants are analogous to the control. In spring the "aneuroploids" developed new sprouts from their adventive root buds, since frost had damaged them in winter. These sprouts could not be distinguished from the control. Consequently this

Card 2/4

group of plants is also represented by chimaeras. This again confirms the chimaerical nature of the C_o-generation (from colchicine-treated seeds). 3) Plants which could not be distinguished from the control, neither by external characteristics nor by their internal structure. Resting and probably dormant buds of the lower part of the axe sprout were transformed into homogenous plants, as far as their ploid degree is concerned, by cutting off the chimaerical part of the plant above the ground. These plants, classified by the author as "tetraploids", are in reality the overground part of polyploid structure which developed on the chimaerical roots. Figure 3 shows the diaploid and tetraploid number of chromosomes of the normal and of the tetraploid Populus tremula. A long colchicine-treatment of the Euonymus europaea (24 hours) showed better results. On oaks colchicine had no effect whatsoever. There are 3 figures and 6 references, 1 of which is Soviet.

ASSOCIATION: Institut lesa Akademii nauk SSSR (Institute of Forestry of the Academy of Sciences, USSR)

Experimental Polyploidy of Populus tremula L. SOV/20-126-1-50/62

PRESENTED: December 26, 1958, by V. N. Sukachev, Academician

SUBMITTED: December 25, 1958

Card 4/4

MATSKEVICH, N.V.

Polyploidy and its significance in forest tree breeding. Trudy MOIP. Otd.biol. 5:322-332 '62. (MIRA 16:5)

1. Laboratoriya lesnoy selektsii, akklimatizatsii i lesnogo semenovedeniya Instituta lesa AN SSSR, Moskva.
(POLYPLOIDY) (TREE BREEDING)

MATSKEVICH, N.V.; TETERYATNIK, A.F.; DMITRIYEV, V.V.; BRYZGALOVA, L.S.

Possibilities of selecting Actinomyces spheroides variants which have lost the ability to produce actinophage. Antibiotiki 10 no.8:693-701 Ag '65. (MIRA 18:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov, Moskva.

MATSKEVICH, P.P.; BABENKO, O.V.

Attachment for the mechanization of lapping. Mashinostroitel' no.12:19 D '65. (MIRA 18:12)

ca

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PROCESSES AND PROPERTIES INDEX

P. E. Brauns [illegible]

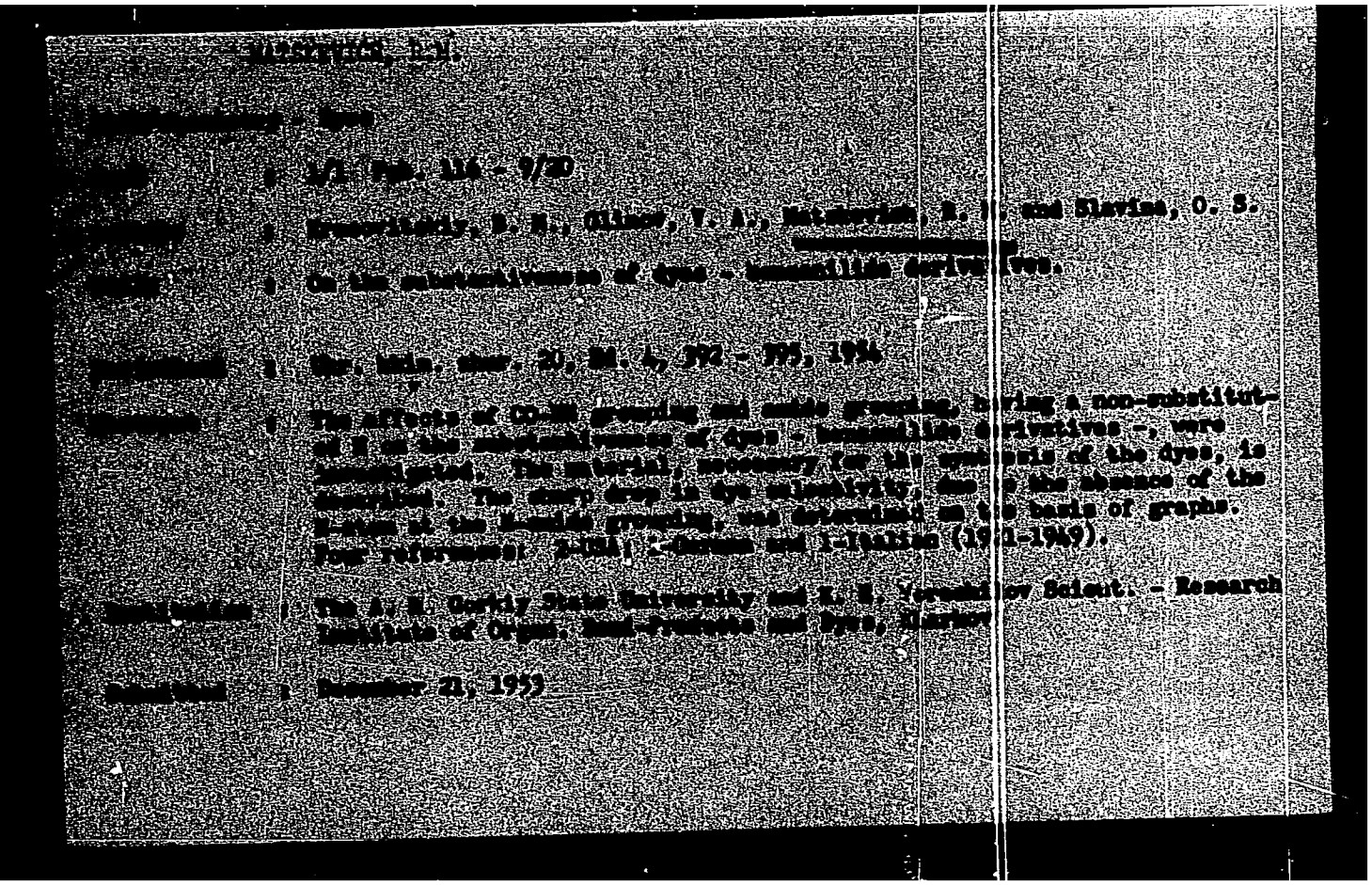
Condensation of propylene oxide with decahydroquinoline and tetrahydro-β-naphthylamine. R. M. [illegible]. J. Gen. Chem. (U.S.S.R.) 11, [illegible] (1941); cf. C.A. 37, [illegible].—Decahydroquinoline (7.5 g.), 5.5 g. propylene oxide, and 2 cc. H_2O in a sealed tube, after standing overnight, were heated to 80° for 6 hrs. and at 95° for 2 hrs. to give [illegible] g. 1-(β-hydroxypropyl)decahydroquinoline, b. [illegible] 117-20°; picrate, m. [illegible] (from EtOH); HCl salt, m. [illegible] (from EtOH-Et_2O). Tetrahydro-β-naphthylamine (14.7 g.), 4 g. propylene oxide, and 2 cc. H_2O similarly gave [illegible] N-(β-hydroxypropyl)tetrahydro-β-naphthylamine, b. [illegible]; picrate, m. [illegible]3° (from EtOH); HCl salt, m. 211-13°. Similar reaction, using an excess of the propylene oxide, gave 20% N,N-bis(β-hydroxypropyl)tetrahydro-β-naphthylamine, m. [illegible]9.5° (from aq. EtOH); picrate, m. [illegible]; HCl salt, m. 113-14.5°. G. M. Kosolapoff

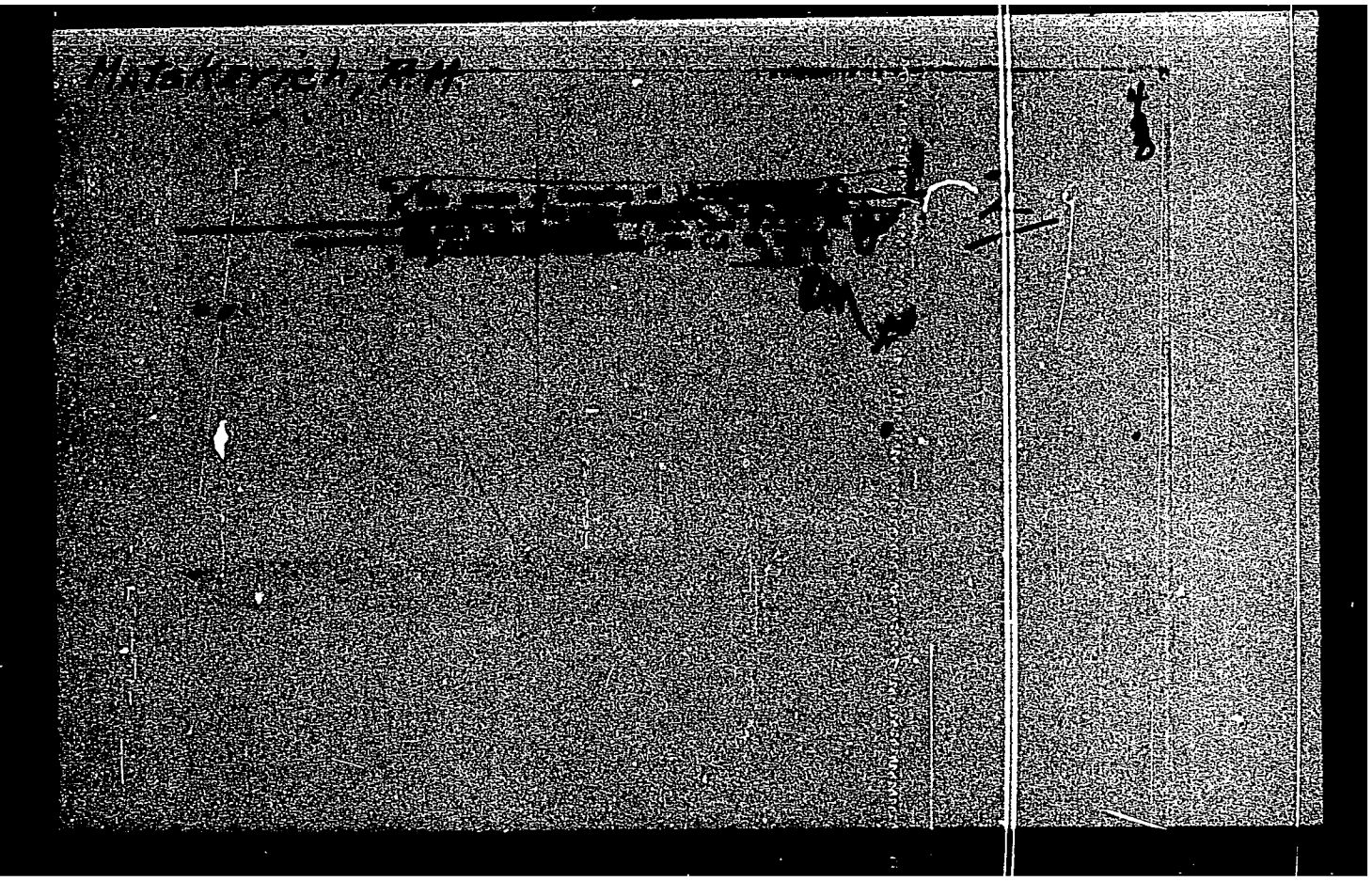
ASD-SLA METALLURGICAL LITERATURE CLASSIFICATION

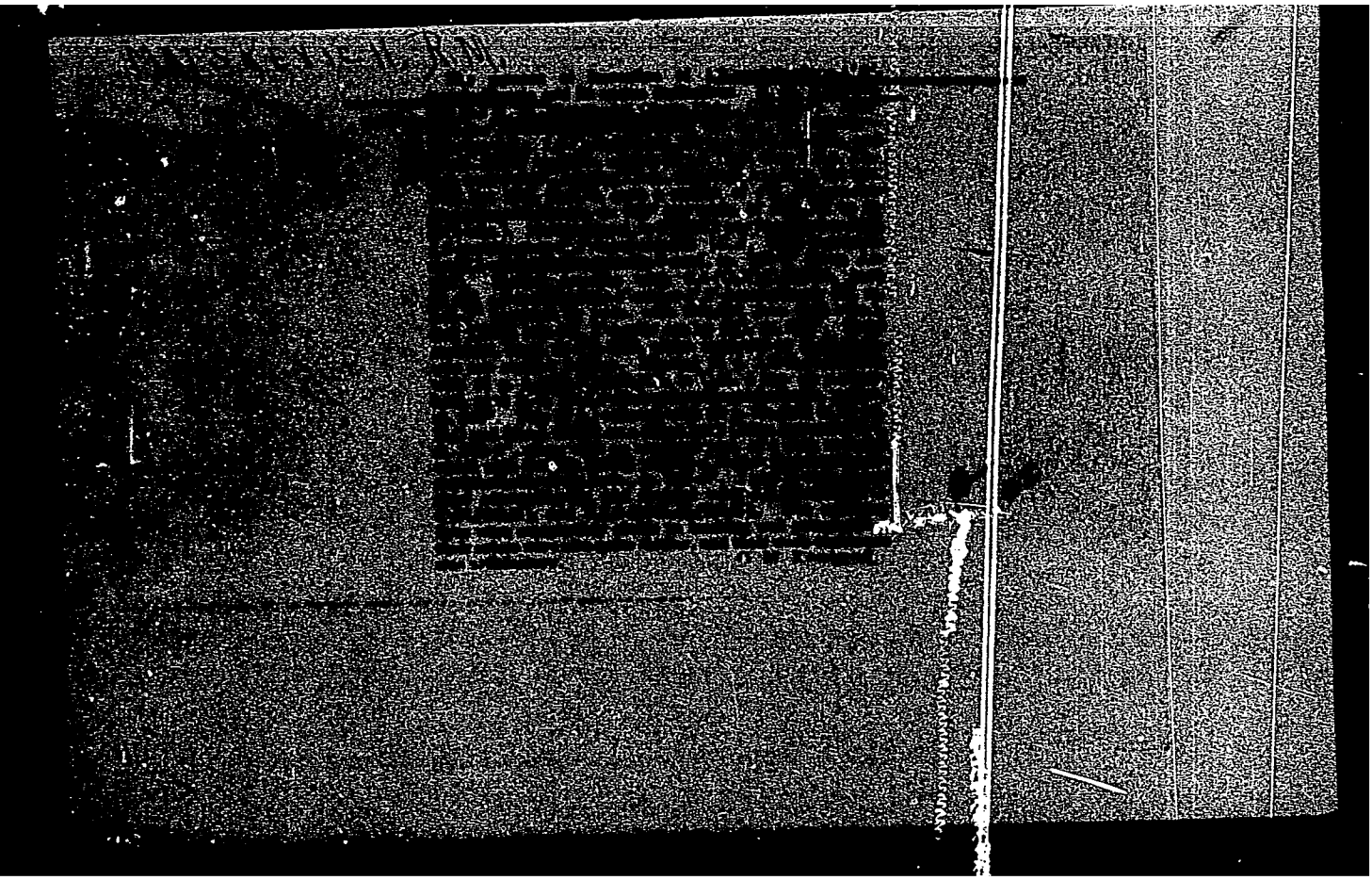
KRASOVITSKIY, B.M.; MATSKEVICH, R.M.; KHOTINSKAYA, Ye.Ye.

One-step method of preparation of aminophenylimides of naphthalic acid from naphthalic anhydride and nitroanilines. Doklady Akad. Nauk S.S.S.R. 86, 953-5 '52. (MLRA 5:11)
(CA 47 no.20:10515 '53)

1. A.M.Gor'kiy State Univ., Kharkov.







MATSKEVICH, R.M.

KHOTINSKIY, Ye.S.; MATSKEVICH, R.M.; KRASOVITSKIY, B.M.

Condensation of naphthalic anhydride and its derivatives with aromatic amines. Part 4: Azo dyes from phenylimides of phthalic, naphthalic, 4-nitronaphthalic, and 4 aminonaphthalic acids. Uch. zap. KHGU 71:155-163 '56. (MLRA 10:8)
(Azo dyes)

KRASOVITSKIY, B.M.; RUDNITSKAYA, Ye.A.; MATSKEVICH, R.M.

Vat dyeing method for methyl methacrylate polymers. Uch.zap. LGU 71:255 '56. (MLRA 10:8)
(Dyes and dyeing) (Methacrylic acid)

MATSKEVICH, R.I.; KRASOVITSKIY, B.M.; KOLESNIK, A.S.

Acid azo dyes from meta-aminophenylimide of naphthalic acid.
Uch.zap. KHGU 71:257-259 '56. (MLRA 10:8)
(Azo dyes) (Naphthlic acid)

KRASOVITSKIY, B.M.; MATSKEVICH, R.M.; NIKISHOVA, T.M.

Relationship between the structure and certain properties of azo dyes containing amide groups. Dokl.AN SSSR 108 no.1:91-94 My '56. (MLRA 9:8)

1. Khar'kovskiy gosudarstvennyy universitet imeni A.M. Gor'kogo. Predstavleno akademikom A.V. Topchiyevym.
(Azo dyes)

KRASOVITSKIY, B.M.; MATSKEVICH, R.M.; RADOCHINA, N.A.; RYAZANOVA, K.P.

Direct azo dyes, derivatives of 1,8-naphthoylene-1',2'-benzimidazole. Zhur.ob.khim. 28 no.9:2485-2489 S '58. (MIRA 11:11)

1. Khar'kovskiy gosudarstvennyy universitet.
(Benzimidazole) (Azo dyes)

5(3) SOV/80-[illegible]

AUTHORS: Dokunikhin, N.S., Kr[illegible], E.M., Matskevich, R.M., Blinov, V.A., Vinokhina, A.Ya.

TITLE: Linear Di-Azo Dyes Which are Derivatives of Oxadiazol and Thiodiazol (Lineynyye disazokrasiteli - proizvodnyye oksadiazola i tiodiazola)

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Vol XXXII, Nr 3, pp 664-667 (USSR)

ABSTRACT: Linear azo dyes containing heterocyclic nuclei connected with the chain by conjugated double bonds are investigated here. The auxochromes are also connected by conjugated double bonds to the chain. An oxadiazol and thiodiazol ring is introduced to the same chain. The dyes prepared are: 2,5-bis-(4-nitrophenyl)-1,3,4-oxadiazol, 2,5-bis-(4-aminophenyl)-1,3,4-oxadiazol, 2,5-bis-(4-nitrophenyl)-1,3,4-thiodiazol, and 2,5-bis-(4-aminophenyl)-1,3,4-thiodiazol. The dyes are resistant to water, soap solution and sweat.

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SOV [illegible]

Linear Dis-Azo Dyes Which are Derivatives of Oxadiazol and Thiodiazol

There are 17 references, 8 of which are Soviet, 6 German, 2 French and 1 Italian.

SUBMITTED: July 26, 1957

Card 2/2

KRASOVITSKIY, B.M.; MATSKEVICH, R.M.; DOKUNIKHIN, E.S.; TRUBITSYNA, N.A.

Direct disazo dyes derived from oxadiazole and thiodiazole. Part 2: Comparative study of isomeric disazo dyes derived from thiodiazole. Zhur.ob.khim. 30 no.8:2608-2613 Ag '60. (MIRA 13:8)

1. Khar'kovskiy gosudarstvennyy universitet i Nauchno-issledovatel'skiy institut organicheskikh poluproduktov i krasiteley.
(Dyes and dyeing)
(Thiadiazole)

KRASOVITSKIY, B.M.; MATSKEVICH, R.M.; MAL'TSEVA, N.I.

Direct disazo dyes, derivatives of oxadiazole and thiodiazole. Part 3: X Comparative study of isomeric disazo dyes, derivatives of 2,5-diphenyl-1,3,4-oxadiazole. Zhur.ob.khim. 31 no.7:2259-2263 Jl '61. (MIRA 14:7)

1. Khar'kovskiy gosudarstvennyy universitet imeni A.M. Gor'kogo. (Azo dyes) (Oxadiazole)

MATSKEVICH, S.

20829. Matskevich, S. Rol' elektrifikatsii v osushchestv lenir stalinskogo plana preobrazovaniya pripody. Voprosy ekonomik', 1949, No. 5, s. 3-20.

SO: LETOPIS ZHURNAL STATEY - Vol. 28, Moskva, 1949.

MATSKEVICH, S

N/5
735.941
.M2

Rol' elektrifikatsii v razvitii material'no-tekhnicheskoy basy sel'skogo khozyaystva SSSR (Role of electrification in the development of the materialtechnical foundation of agricultural economy in the USSR) Moskva, Gospolitizdat, 1952.
207 p. tables.

MATSKEVICH, S.

Rural Electrification

Electrification of socialist agriculture ("Role of electrification in developing the material and technical basis of Russian Agriculture." Reviewed by A. Libkind). Sots. sel'khoz. 23 no. 8, 1952.

9. Monthly List of Russian Accessions, Library of Congress, November 1952, Uncl.

MATSKEVICH, S. F. (Docent) Dr. Tech. Sci.

Dissertation: "General Problem of Supplying Crossties and its Solution for the Railroads of Western Siberia." Moscow Order of Lenin Inst. of Railroad Engineers, imeni I. V. Stalin, 28 May 47.

SO: Vechernyaya Moskva, May, 1947 (Project #17836)

MATSKEVICH, S. L.

USSR / Microbiology. Microbes Pathogenic to Humans and Animals. F-3

Abs Jour : Ref Zhur - Biol., No 2, 1958, No 5309

Author : Matskevich, S.L.
Inst : Not given
Title : Bacteriology of Infectious Process in Experimental Ictero-Hemorrhagic Leptospirosis (Vasil'yev-Veyle Disease)

Orig Pub : Tr. Rostovsk.-n/D. gos. n.-i. protivochumn. in-ta, 1956, 10, 478-481

Abstract : Guinea pigs, white mice, white rats, and marmots were infected subcutaneously, intradermally, intraperitoneally, through the eyes and by mouth by a virulent strain "Sudyin". In all methods of infection, the spreading of leptospira in the organism proceeded in the same manner: leptospira rapidly penetrated into the blood from the spot where it was injected, causing leptospiremia. Due to hematogenic dissemi-

Card : 1/2

MATSKEVICH, S.L.

USSR / Microbiology. Microbes Pathogenic to Humans and Animals. F-3

Abs Jour : Ref Zhur - Biol., No 2, 1958, No 5310

Author : Matskevich, S.L.
Inst : Not given
Title : Spread of Leptospira in the Organism of Actively and Passively Immunized Guinea Pigs.

Orig Pub : Tr. Rostovsk.-n.-D. gos. n.-i. protivochumn. in-ta, 1956, 10, 482-485

Abstract : One group of guinea pigs was passively immunized by injection intraperitoneally with three ml of rabbit antileptospiral serum. After twelve hours, the animals received three ml of a culture of icterohemorrhagic "Sudyin" strain hypodermically. At the point of injection, the number of leptospira rapidly decreased, and were not found at the end of the first 24 hours. In the blood, one hour after infection,

Card : 1/2

MATSKEVICH, S.L.

122 5-7/30

AUTHOR: Somin, B.Kh., Candidate of Technical Sciences and Matskevich, S.L., Engineer.

TITLE: Improvement of the Resistance of Stainless Steel against Seizure under Friction with Lubrication. (Povysheniye stoykosti nerzhaveyushchey stali protiv zadiraniya pri trenii so smazkoy)

PERIODICAL: Vestnik Mashinostroyeniya, 1957, No.3, pp. 28 - 34 (USSR).

ABSTRACT: Tests were carried out with the aim of finding the causes of the increased tendency of stainless steels to fail through seizure, of clarifying the part played by the chemical composition of the steel and of developing an effective protection method for stainless steel components against seizure or fretting. The tendency to seize was judged by the strength of the adsorption bond between the lubricant and the steel; seizure being the breakdown of this bond under conditions of boundary lubrication. Methods based on the wetting angle and on the study of metal transfer by means of radio-active isotopes did not give satisfactory results. The direct determination of the seizure load was carried out in an Amsler machine under various

Card1/3 loads with a constant duration of the test accompanied by a

Improvement of the Resistance of Stainless Steel against Seizure under Friction with Lubrication.

measurement of the friction torque. The shoe and the roller were made of the same material and subjected to the same heat treatment. The seizure load was that which produced traces of seizure on the specimen surfaces after the test and sharp steps in the torque records. Lubricants tried included machine oil, spindle oil, No.214 greases, sulphur and chlorine containing oil ИФНП of the Neftemaslozavod Trust. Tests were also conducted with lacquer-coated surfaces. Carbon steel specimens were compared with chromium steel specimens, with chromium contents between 1.44 and 21.99% and with stainless steels proper having a nickel content of about 2.5% and a varying chromium content between 1.14 and 12.34%. Some specimens had small additions of molybdenum and columbium. Without lubrication, both carbon and stainless steel invariably suffer intensive seizing and surface wear associated with high-friction coefficients (0.5 - 0.7). Increase in hardness only slightly changes the intensity of wear. So long as oleic acid is present, the coefficient of friction in carbon steel does not exceed 0.1 and seizure is completely eliminated. With stainless steel, oleic acid has little effect except a small reduction of the mean coefficient of friction but this is subjected to large fluctuations. The chromium content

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122-3-7/30

Improvement of the Resistance of Stainless Steel against Seizure under Friction with Lubrication.

has a decisive influence on the seizure load. The share reduction of the seizure load occurs mainly even below a chromium content of 6%. Thus, the seizure loads in constructional nickel chrome steels is already much lower than in carbon steels. Sulphur admixtures to the lubricant appreciably increase the seizure load but do not reach the carbon steel value. Several other tests were carried out. A small increase was obtained by phosphating. A larger effect was obtained by sand-blasting, which, however, reduces the corrosion resistance of stainless steel. Stainless steel surfaces after sand-blasting must be rendered passive by nitric acid or another method. Lacquer coatings were found to be very effective. Coatings on a polyvinyl base increased the seizure load by a factor of 4 compared with phosphating or sand-blasting, alone. In carbon steel the seizure loads with spindle oil, machine oil and grease are 30 kg, 50 kg and over 200 kg, respectively. In stainless steel, 3 kg, 5 kg and 30 kg, but when sand-blasted (or phosphated) and lacquer-coated, the seizure load in stainless steel rises to 240 kg with grease lubrication. There are 11 figures, including 5 graphs, 5 tables and 5 Slavic references.

AVAILABLE: Library of Congress.

Card 3/3

35977
S/711/60/014/000/007/013
D262/D301

11.9000

AUTHORS: Somin, B.Kh., and Matskevich, S.L.

TITLE: Tear resistance of stainless steels in friction with lubrication

SOURCE: Akademiya nauk SSSR. Institut mashinovedeniya. Treniye i iznos v mashinakh, v. 14, 1960, 185 - 201

TEXT: Experiments were conducted to reveal reasons for the tendency of stainless steels to tear, and to work out effective methods of prevention. Critical loads (or tear loads) were determined by the testing of a series of pairs 'block-roller' on Amsler's machine, at various loads, from 5 to 200 kg, and at constant duration of tests (2000 revs). Friction moments were recorded. The behavior of carbon and stainless steels were compared during friction with and without lubrication, to determine the effect of the chromium content in steel on the size of the tear load on friction with lubrication and to establish the effect of some methods of surface treatment of stainless steels on the size of the tear load. It was concluded that: 1) The main reason for the increased tendency of stainless

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steel to tear at friction with lubrication is its reduced ability to retain lubricants on its surface. 2) Addition of chromium reduces the ability of the surface to adsorb the lubricant; with high chromium contents the tear load is 10 - 20 times less than at low chromium contents. 3) The increased tear load of stainless steel can be obtained by sand blasting and then treating the sand blasted surface with lubricant adsorbing coatings, usually on a polyvinyl basis; adhesive BF-2 (BF-2), polymerized at 140 - 160°C is considered to be the best. 4) Lacquer coatings permit one to retain the effectiveness of parts until fully worn off. There are 9 figures, 4 tables and 13 references: 6 Soviet-bloc and 7 non-Soviet-bloc. The 4 most recent references to the English-language publications read as follows: E. Rabinowicz, Physics of Lubrication, British J. of Appl. Physics, Suppl. no. 1, 1951, p. 82; Burwell et al., Metal Progress, v. 60, 1951, p. 69; F. Barwell and A. Miln, Physics of Lubrication, British J. of Applied Physics, Supp. no. 1, 1951, p. 39; F.P. Bowden and D. Tabor, Friction and Lubrication of Solids, Oxford, 1950, p. 176.

MATSKEVICH, T. L.

USSR/Physics - Secondary Electrons Aug 52

"Electron Emission and Reflection of Potassium Ions From the Surface of Liquid Tin," M. A. Yeremeyev, T. L. Matskevich

"Zhur Tekh Fiz" Vol 22, No 8, pp 1296-1300

Authors studied subject phenomenon, using solid targets [see 226T89, 226T90, and 226T93]. In this investigation a liquid tin surface in various states is used as target. Energy of bombarding ions is varied from 200 ev to 6 kev. Authors state that the emission of electrons and reflection of ions obeyed the laws found in previous expts mentioned for Ta and W.

226T94

USSR/Electronics - Electronic and Ionic Emission

Abs Jour : Referat Zhur - Fizika, No 5, 1957, 12288

H-2

Author : Matskevich, T.L.
Inst :
Titl : Secondary Electron Emission of a Single Crystal of NaBr.

Orig Pub : Zh. tekhn. fiziki, 1956, 26, No 10, 2399-2400

Abstract : An investigation was made of the secondary electron emission of five single-crystal platelets of NaBr. The result obtained is σ_{max} 24 ± 2 at U_p = 1800 volts for normal incidents of the primary beam, and $\sigma_{max} > 30$ for an angle of incidents of 50° at $U_p \geq 3000$ volts. Heating the target from 20 to 300° results in a reduction of σ in the region of high energies of the primary electrons by a factor of 1.5 times, i.e., considerably more than follows from the Dekker theory. (Referat Zhur Fizika 1955, 22362).
Bibliography, 4 titles.

Card 1/1

AUTHOR: MATSKEVICH,T.L. PA - 2124

TITLE: The Investigation of the Reflection of Electrons by Insulators. (Issledovaniye otrazheniya elektronov ot dielektrikov. Russian)

PERIODICAL: Zhurnal Tekhn. Fiz., 1957, Vol 27, Nr 2, pp 289 - 295 (U.S.S.R.)
Received: 3 / 1957 Reviewed: 4 / 1957

ABSTRACT: It was the task of the present paper to investigate the coefficient η (of the elastic and unelastic reflection of electrons) for a number of nonconductors in the cases of different conditions, as well as approximatively to determine the distribution of the fast electrons coming from the target with full energy. An illustration shows the device with which measurements of η were carried out. There then follows a description of the device. Measurements were carried out in accordance with the methods of single impulses of 30 μsec duration. The systematic errors committed in connection with measurements amounted to not more than 2%. The dependence of η on the energy of the primary electrons for several angles of incidence of the primary bundle as well as the dependence of η on the angle of incidence of the primary electrons φ is measured in the case of a constant primary voltage. Diagrams show measuring results. An illustration shows the device with the aid of which it was possible to record the distribution of electrons coming with full velocity from the target and thus to explain the character of this distribution.

PA - 2124

The Investigation of the Reflection of Electrons by Insulators.

There follows a description of this device and of the measurements carried out by means of it, results again being shown in form of diagrams. The following conclusions are drawn: 1) The reflection coefficient for a number of insulators was measured within range of the primary energies of from 200 to 5000 eV. 2) Dependence of the reflection coefficient on the angle was found to exist. 3) It was shown that the reflected electrons have an uninterrupted energy spectrum up to U_p (energy of primary eletrons). (8 illustrations).

ASSOCIATION: Physical-Technical Institute of the Academy of Science of the U.S.S.R., Leningrad.

PRESENTED BY:
SUBMITTED: 5.6.1956.
AVAILABLE: Library of Congress.

Card 2/2

MATSKEVICH, T.L.

AUTHOR: DOBRETSOV,L.N., MATSKEVICH,T.L. PA - 2800

TITLE: Effect of Reflected Electrons in Second Electronic Emission. (Rol'otrazhennykh elektronov vo vtorichnoy elektronnoy emissii, Russian).

PERIODICAL: Zhurnal Tekhn. Fiz., 1957, Vol 27, Nr 4, pp 734 - 744 (U.S.S.R.)

Received: 5 / 1957 Reviewed: 6 / 1957

ABSTRACT: In this paper a new system of measuring σ_{total} according to the method of single impulses was worked out. σ_{total} denotes the phenomenological coefficient of secondary electron emission (abbr. SEE), which is equal to the ratio between the electron-current originating from the target, and the current of descending primary electrons. This method permits an increase in accuracy of measurement up to 1 ÷ 2 %. The coefficients of SEE σ_m (the ratio between the sum of currents in the target circuit and the current with negative collector potential) and σ_{total} were measured for a number of dielectrics. It is shown that the theorem of affinity does not hold in this case. The dependence of the coefficients σ_{total} and σ_m on the angle for a number of dielectrics was measured. It is shown that in several dielectrics σ_{sec} decreases in the range $U_p < U_{p\ max}$ with a growing angle of descent, which circumstance

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Effect of Reflected Electrons in Second Electronic Emission.

can be connected with the increase of the reflection-coefficient in the case of growing φ (angle of descent of the primary electron beam). The influence of reflected electrons on the SEE-pheomenon was investigated. On the basis of experimental data formulae for the comparative judgement of σ_{theor} (theoretical coefficient of SEE) were deduced in the range U_p. In this range the free path of the dispersion of primary electrons is greater than the effective work function of the secondary electrons λ_2. The investigation of σ_{theor} carried out here lead to suppose that the reflected electrons play a considerable part in the process of exciting secondary electrons and that this influence should not be neglected when investigating the SEE-phenomenon, especially in the case of materials, which show a high reflection - coefficient.
(7 illustrations, 1 table and 4 citations from Slav publications)

ASSOCIATION: LFTI
PRESENTED BY/
SUBMITTED: 13.11.1956
AVAILABLE: Library of Congress.
Card 2/2

MATSKEVICH, T. L. Cand Phys-~~Engineering~~ Tech Sci -- (diss) "Study of the repulsion of electrons and the angle ~~functions~~ dependence of the coefficients of secondary electronic emission for dielectrics." Len, 1958. 13 pp (Acad Sci USSR. Len Phys-~~Engineering~~ Tech Inst), 100 copies

16

SOV/109-4-4-24/24

AUTHORS: Vasil'yev, G.F., Politova, N.M., Shabel'nikova, A.E., Pervova, L.Ya. and Yasnopol'skaya, A.A.

TITLE: Interdepartmental Seminar on Cathode Electronics (The 11th Meeting) (Mezhduvedomstvennyy seminar po katodnoy elektronike) (11-e zasedaniye)

PERIODICAL: Radiotekhnika i elektronika, 1959, Vol 4, Nr 4, pp 731 - 732 (USSR)

ABSTRACT: A meeting of the seminar took place on December 1, 1958 at the Institut radiotekhniki i elektroniki AN SSSR (Institute of Radio-engineering and Electronics of the Ac.Sc.USSR). During the meeting 8 papers were read. Yu.G. Ptushinskiy read a paper entitled: "Kinetics of the Adsorption of Oxygen on the Surface of Tungsten". The second paper, by I.M. Dykman and S.M. Pekar, dealt with "The Admixture Photo-effect of Semiconductors in the Region of the Exciton Light Absorption". The paper by T.L. Matskevich was devoted to "The Problem of the Secondary Electron Emission of Fine Films of a Number of Organic Substances". The problem of "Surface Ionisation in a Strong Electric Field on a Surface with

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a Non-homogeneous Work Function" was considered by E.Ya. Zandberg and N.I. Ionov. I.N. Bakulina and N.I. Ionov read a paper entitled "Determination of the Electron Attachment Energy and of the Potentials of Atoms by the Method of Surface Ionisation". N.L. Yasnopol'skiy and A.P. Alekseyev dealt with the problem of "Passage of Steady-state Currents Through a Dielectric When the Current Carriers Are Introduced Through One of the Contacts by Means of Electron Bombardment". The lecture by D.A. Ganichev and E.G. Utkin discussed the following - "The Possibility of the Analysis of the Total-energy Distribution of Electrons in a Quasi-spherical Condenser". The work by N.L. Kapitsa, S.A. Fridrikhov and A.R. Shul'man dealt with an investigation of the secondary electron emission and the characteristic energy losses of a number of dielectrics (glass, mica, fluorite and alkali-haloid monocrystals).

Card 2/2

USCOMM-DC-60997

MATSKEVICH, T. L.

81966
S/181/60/002/04/28/034
B002/B063

24.7710

AUTHORS: Matskevich, T. L., Mikhaylova, E. G.

TITLE: Secondary Electron Emission of Ice and Anthracene Films

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 4, pp. 709-715

TEXT: The secondary electron emission had hitherto been examined in more detail only for metals and ion crystals. For their investigation, the authors selected anthracene and ice as examples of crystals with covalent and hydrogen bonds. The samples were distilled in vacuo and melted in ampoules. In the measuring device (Fig. 1) the ampoules were broken up with a mechanism. The samples were heated with a filament winding, and formed a film on the molybdenum target, while the apparatus was cooled with liquid nitrogen. The measurements were made by the single-pulse method (Ref. 2). The time dependence of the coefficient of secondary electron emission σ and of the coefficient of inelastic reflection η was measured first (Fig. 2 for ice, Fig. 3 for anthracene). After about 20 sec the values for σ and η changed no longer. The dependence of σ and η on the primary electron energy was determined next; it was found to be between

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Secondary Electron Emission of Ice and Anthracene Films

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S/181/60/002/04/28/034
B002/B063

100 and 2500 ev. For anthracene η is between 0.15 and 0.10 and for ice between 0.20 and 0.10 (Fig. 4). For anthracene σ is between 1.3 and 0.7 and for ice between 2.3 and 1.2 (Fig. 5). For comparison, the curves for molybdenum are also included in the diagrams in each case. A compilation of the curves for polyethylene, polystyrene, anthracene, and carbon (Fig. 6) is indicative of a relationship between the carbon content of the compounds and σ. The work was carried out at L. N. Dobretsov's laboratory. The authors thank him for his supervision and assistance. There are 6 figures and 6 Soviet references.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN SSSR, Leningrad
(Physicotechnical Institute of the AS USSR, Leningrad)

SUBMITTED: July 6, 1959

Card 2/2

32077
S/181/61/003/012/011/028
B102/B108

24.7700 (1136, 1164, 1385)

AUTHORS: Martsinovskaya, E. G., Matskevich, T. L., and Rubanova, G M.

TITLE: Secondary electron emission from iodine

PERIODICAL: Fizika tverdogo tela, v. 3, no. 12, 1961, 3634 - 3636

TEXT: The coefficients of secondary electron emission, σ and of inelastic reflection, η, as dependent on primary electron energy u_p were determined by means of an arrangement described before (T L. Matskevich E. G. Mikhaylova. FTT, 2, 4, 709, 1960). σ and η were measured for $200 \leq u_p \leq 3000$ ev by the method of single pulses. The pressure in the vacuum vessel was $5 \cdot 10^{-8}$ - $1 \cdot 10^{-7}$ mm Hg. The iodine films examined were vapor-plated upon graphite or molybdenum backings. $\sigma(u_p)$ and $\eta(u_p)$ were measured at room and nitrogen temperatures, σ and η as functions of the plating time t, i. e. of the film thickness, were also determined. σ_{max} as determined from the $\sigma(u_p)$ curve for I was 1.4 (Fig. 2). From the $\sigma(t)$-curves for I upon Mo, the depths from which the slow secondary electrons

Card 1/2

Secondary electron emission...

emerge were estimated for u_p = 500, 1000 and 3000 ev. They were 570, 84[illegible] and 1100 Å, respectively. In this estimation it was assumed that the energy distribution of the inelastically reflected electrons is the same for both I and Mo. L. N. Dobretsov is thanked for assistance. There are 4 figures and 3 references: 1 Soviet and 2 non-Soviet. The two references to English-language publications read as follows: E. J. Sternglass Phys. Rev. 96, 345, 1954; R. N. Xoyarg. Trans. Farad. Soc., 35, 1401, 1939

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe AN SSSR Leningrad (Physicotechnical Institute imeni A. F. Ioffe AS USSR, Leningrad)

SUBMITTED: July 3, 1961

Fig. 1. $\sigma(t)$ and $\eta(t)$ for iodine on graphite at u_p = 2500 ev.

Fig. 2. $\sigma(u_p)$ for iodine (1), graphite (2) and molybdenum (3)

Fig. 3 $\eta(u_p)$ for iodine (1) and graphite (2).

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42733

S/109/62/007/011/012/012
D295/D308

9.3120

AUTHORS: Matskevich, T.L., Krachino, T.V. and Kazantsev, A.P.

TITLE: Thermal electron emission of TaB

PERIODICAL: Radiotekhnika i elektronika, v. 7, no, 11, 1962, 1972 - 1973

TEXT: The thermionic properties of TaB_2 have been investigated with a view to its use as a cathode. Tungsten, tantalum, tungsten carbide and spectrally pure carbon were used as the base layers. The results are illustrated by the example of the 'ageing curve' of a TaB_2 cathode on tungsten, showing the emission current density for 600 V anode voltage as a function of time in the course of heat treatment. The treatment temperature and the work function at the beginning and end of each ageing stage are indicated. At high temperatures (1910 - 2490° K) the emission decreases sharply owing to deactivation. Maximum emission of 1-3 A/cm^2 (minimum work function 2.8 - 2.9 eV) is obtained at 1600-

Card 1/2

S/109/62/007/011/012/012
D295/D308

Thermal electron emission of TaB_2

1800°K. An anomalous Schottky effect is observed for field intensities up to 6×10^4 V/cm. The use of TaB_2 as an efficient emitter is ruled out both at low and at high temperatures, whatever the base layer. There is 1 figure.

SUBMITTED: May 17, 1962

Card 2/2

34213
S/057/62/032/002/014/022
B124/B102

26.2253

AUTHORS: Matskevich, T. L., and Krachino, T. V.

TITLE: Thermionic emission from some high-melting compounds

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 32, no. 2, 1962, 220 - 223

TEXT: The temperature dependence of the thermionic current density measured for NbC, a solid solution of NbC-UC containing 14.4% U, a solid solution of TaC-UC containing 20% UC, and ZrC has been established. The work functions of these compounds were determined using the total current method. Thermionic emission was measured with a device containing a directly heated cathode, a Ta anode, and protective electrodes. The device was evacuated with a mercury diffusion pump to less than 10^{-7} mm Hg. The cathodes were heated while continuously evacuating to at least 10^{-6} mm Hg and the thermionic emission current was measured simultaneously. The cathode temperature was measured with an optical pyrometer. Tapes and wires were used as base-plate materials; in the first case, the examined substance was applied to one side of the tape only, and temperature was measured from the other side of the tape, while in the second case only

Card 1/3

Thermionic emission from ...

the temperature determined from luminosity was measured. The emission coefficient for $\lambda = 0.65$ is about 0.95 for NbC, and 0.96 for ZrC. The cathodes were prepared by applying a suspension of powdered material in a nitrocellulose solution in amyl acetate to the base plate up to a thickness of 100 μ, the grain size of the powder being about 10 μ. For TaC-UC and NbC-UC, only a WC-coated tungsten wire was used, which can be heated without destruction up to about 2700°K, whereas tapes consisting of W and Ta and 30 μ thick, and W and WC wires were used for NbC. ZrC was examined both on W and Ta. The dependence of the current density on the actual temperature was measured for ZrC on W and for ZrC on Ta and the influence of thermal history on the thermionic emission of some cathodes was studied. The temperature dependence of the current density for TaC-UC, NbC, and WC-W was well reproducable. M. B. Vol'fson is mentioned, and L. N. Dobretsov is thanked. There are 4 figures and 5 references: 1 Soviet and 4 non-Soviet. The four references to English-language publications read as follows: G. Grover, Nucleonics 17, No. 7, 54, 1959; R. W. Piddn, J Appl. Phys. 30, No. 10, 1575, 1959; D. L. Goldwater, R. A. Haddan J. Appl. Phys. 22, no. 1, 70, 1951; F. H. Morgan, J. Appl. Phys. 22, 108, 1951.

Card 2/3

34213
S/057/62/032/002/014/022
B124/B102

Thermionic emission from ...

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe AN SSSR, Leningrad (Physicotechnical Institute imeni A. F. Ioffe; AS USSR, Leningrad)

SUBMITTED: March 27, 1961.

Card 3/3

MATSKEVICH, T.L.

A diode with cesium vapors. Zhur. tekh. fiz. 32 no.9:1139-1141 S '62. (MIRA 15:9)

1. Fiziko-tekhnicheskiy institut imeni A.F. Ioffe AN SSSR, Leningrad.
(Diodes) (Cesium)

AUTHORS: Kalantsev, A. P.; Matskevich, T. L.

TITLE: Secondary electron emission of methylmetacrylate

SOURCE: Fizika tverdogo tela, v. 6, no. 8, 1964, 2393-2400

TOPIC TAGS: methylmetacrylate, secondary electron, secondary emission, thin film, inelastic scattering, electron reflection, electron transmission

ABSTRACT: A study was made of the secondary electron emission coefficient (seec) σ, the inelastic reflection coefficient (irc) η, and

metacrylate films as a function of the energy ... p
the angle of incidence φ of primary electrons. The film thicknesses
(300--700 Å) was such that presence of a metal base in reflection
experiments did not affect the results. The angular dependence of

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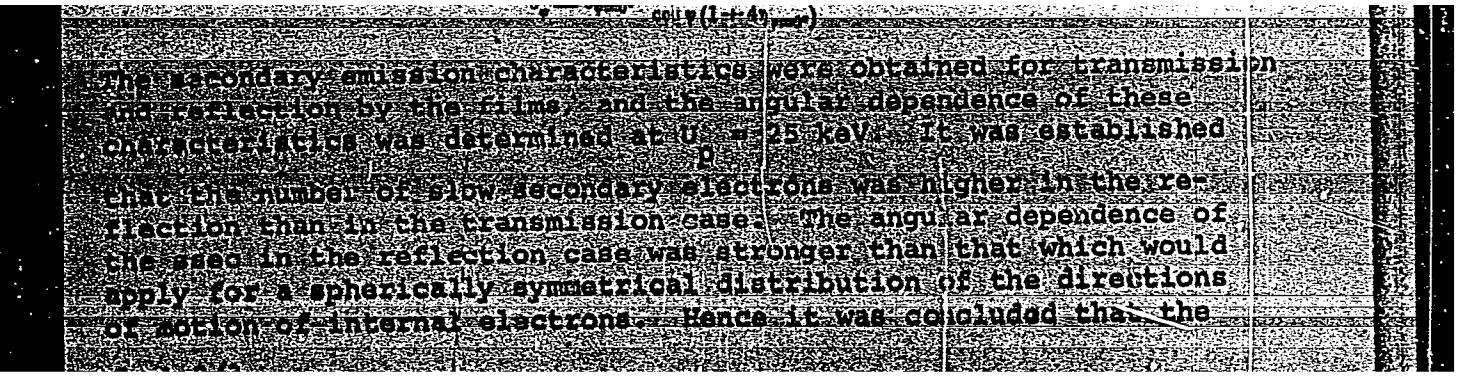
L 18853-65
ACCESSION NR: AP4043359

the irc obeyed well the relationship

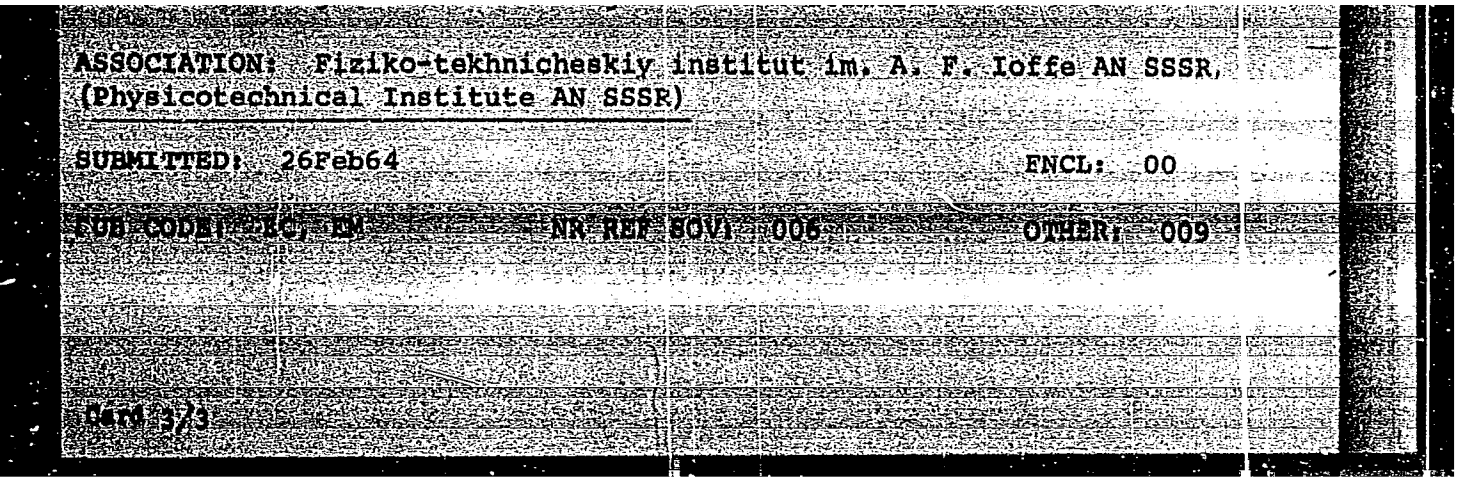
$$I_\varphi = \frac{1}{(a+p^2)(1+2p^2)}\left[a^2+ap^2-2p^6+2p^3(a+p^3+p^2)\left(\frac{p}{1+p}\right)^{\frac{a}{p^2}+1}\right],$$

where $p = \cos\varphi$, $a = 0.045z$, and z is a parameter of the substance.



The secondary emission characteristics were obtained for transmission and reflection by the films, and the angular dependence of these characteristics was determined at $U_p = 25$ keV. It was established that the number of slow secondary electrons was higher in the reflection than in the transmission case. The angular dependence of the yield in the reflection case was stronger than that which would apply for a spherically symmetrical distribution of the directions of motion of internal electrons. Hence it was concluded that the

distribution of internal excited electrons was not directionally isotropic in direction in the half-space over the plane perpendicu-



ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe AN SSSR, (Physicotechnical Institute AN SSSR)

SUBMITTED: 26Feb64 ENCL: 00

SUB CODE: EC, EM NR REF SOV: 006 OTHER: 009

Card 3/3

ACCESSION NR: AP4043678 S/0109/64/009/008/1440/1446

AUTHOR: Kazantsev, A. P.; Krachino, T. V.; Matskevich, T. L.

TITLE: Thermionic emission of zirconium carbide

SOURCE: Radiotekhnika i elektronika, v. 9, no. 8, 1964, 1440-1446

TOPIC TAGS: thermionic emission, zirconium carbide, cathode emission

ABSTRACT: The emission from ZrC powder (on Ta, C, or W backing) and ZrC bars was experimentally investigated in a 1,300--2,400K-temperature range, the ion current from ZrC in Cs vapor was measured. The maximum permissible operating temperature of ZrC cathodes on a W backing is found to be 2,400K. The good emission characteristics of a ZrC cathode are proved by the fact that current densities up to 37 amp/cm^2 at 5×10^4 v/cm and 2,400K are possible. It is also found that the experimental Schottky-line slope is 1.4 times greater than its theoretical value. The life of the above cathode is limited by the evaporation

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ACCESSION NR: AP4043678

rate of ZrC; the active layer hardly changes its emission characteristics in the process of evaporation. The surface ionization of ZrC obeys the Sach-Langmuir law. "The authors are deeply grateful to L. N. Dobretsov for his constant interest and help in the work." Orig. art. has: 4 figures, 4 formulas, and 1 table.

ASSOCIATION: none

SUBMITTED: 13May63 ENCL: 00

SUB CODE: EC NO REF SOV: 004 OTHER: 007

Card 2/2

L 15021-65 EWP(e)/EPA(s)-2/EWT(m)/EPF(n)-2/EPR/EPA(bb)-2/EWP(b)/EWP(t) Ps-4/Pu-4/
Ps-10 ESD/ASD(a)-5/AFWL/ESD(t) AT/WH/WW/JD/JG
ACCESSION NR: AP4042044 S/0057/64/034/011/2021/2027

AUTHOR: Matskevich, T.L.; Krachino, T.V.; Kazantsev, A.P.; Markova, L.S.

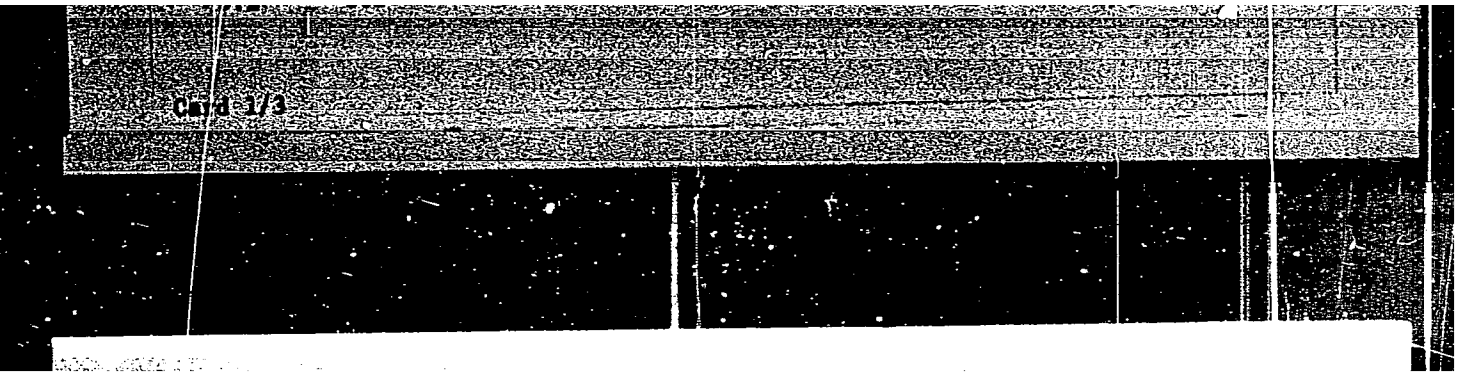
TITLE: Thermionic emission properties of certain high-melting compounds on metal backings

SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no.11, 1964, 2021-2027

SOURCE: Zhurnal tekhnicheskoy fiziki, 1967,

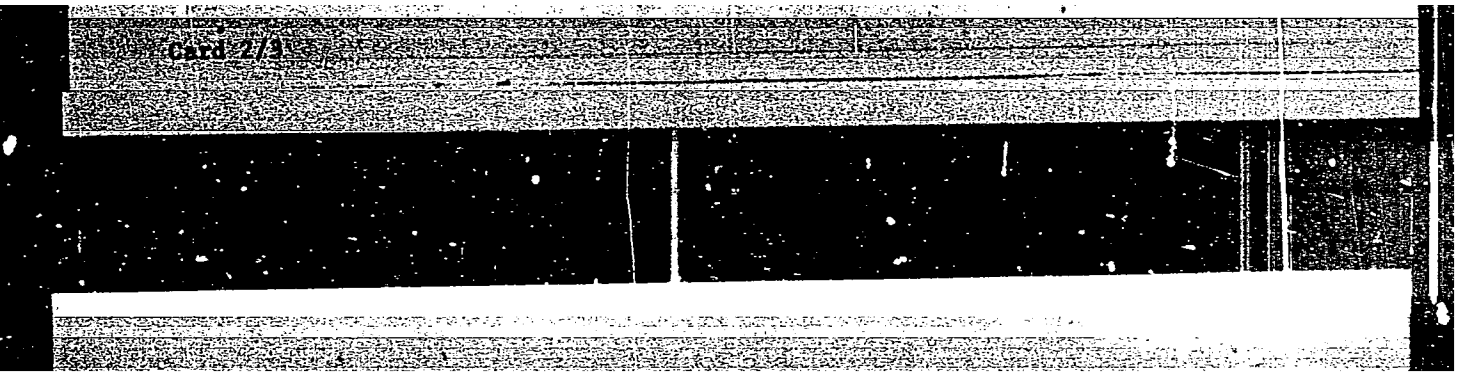
TOPIC TAGS: thermionic emission, cathode layer, emitter, refractory compound, carbide, boride

ABSTRACT: The present study was initiated in 1959 in the laboratory of L.N.Dobretsov in view of the growing need for efficient high-temperature emitters and the paucity of experimental data on suitable refractory compounds. The principal purposes of the work were to obtain data on the thermoemissive properties of a series of high-melting compounds at temperatures above 2000K, including the emissive properties in cesium vapor, and to determine what factors limit the maximum operating temperature. The materials investigated so far include ZrC, TaC, NbC, HfC, HfO_2, and $(UC)_{0.2}$-$(ZrC)_{0.8}$, which have been studied earlier, and WC, VC, HfB_2, TaB_2,



APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R032932910019-2"

$(UC)_{0.08}$-$(NbC)_{0.92}$ and $(UC)_{0.2}$-$(TaC)_{0.8}$, which had not been investigated previously for their thermionic emission characteristics. The powdered materials were coated in the form of a suspension in amylacetate with cellulose binder on one side of direct heated ribbon filaments of Ta, W, or WC (one or more as seemed appropriate; TaB_2 was tested on all three bases, plus C). The thickness of the coatings was 20 to 40 microns. The measurements were carried out in a special tube. The results are presented in tables (and for some materials as curves) giving the values of the emission function Φ ... that could be obtained in the process of aging, the maxi-



L 15024-65

ACCESSION NR: AP4049044

(over 1000 hours). HfB_2 adsorbs cesium better than W; the other compounds investigated in this respect are poorer adsorbers. Surface ionization of cesium on ZrC and TaC obeys the Saha-Langmuir equation at T = 1400 to 1800K and p_{Cs} = 0.001 mm Hg. The authors are grateful to L.N.Dobretsov for his constant interest and help in the work. Orig.art.has: 2 formulas, 3 figures, and 4 tables.

ASSOCIATION: none

SUBMITTED: 02Mar64 ENCL: 00 SUB CODE: MT, EC

NO REF SOV: 004 OTHER: 003 ATD PRESS: 3143

Card 3/3

L 25921-66 JT
ACC NR: AP6016680 SOURCE CODE: UR/0109/65/010/006/1164/1166

AUTHOR: Ivanov, G. A.; Ryabova, L. A.; Savitskaya, Ya. S.; Matskevich, T. L.; Chalyshkov, S. P. 53 B

ORG: none

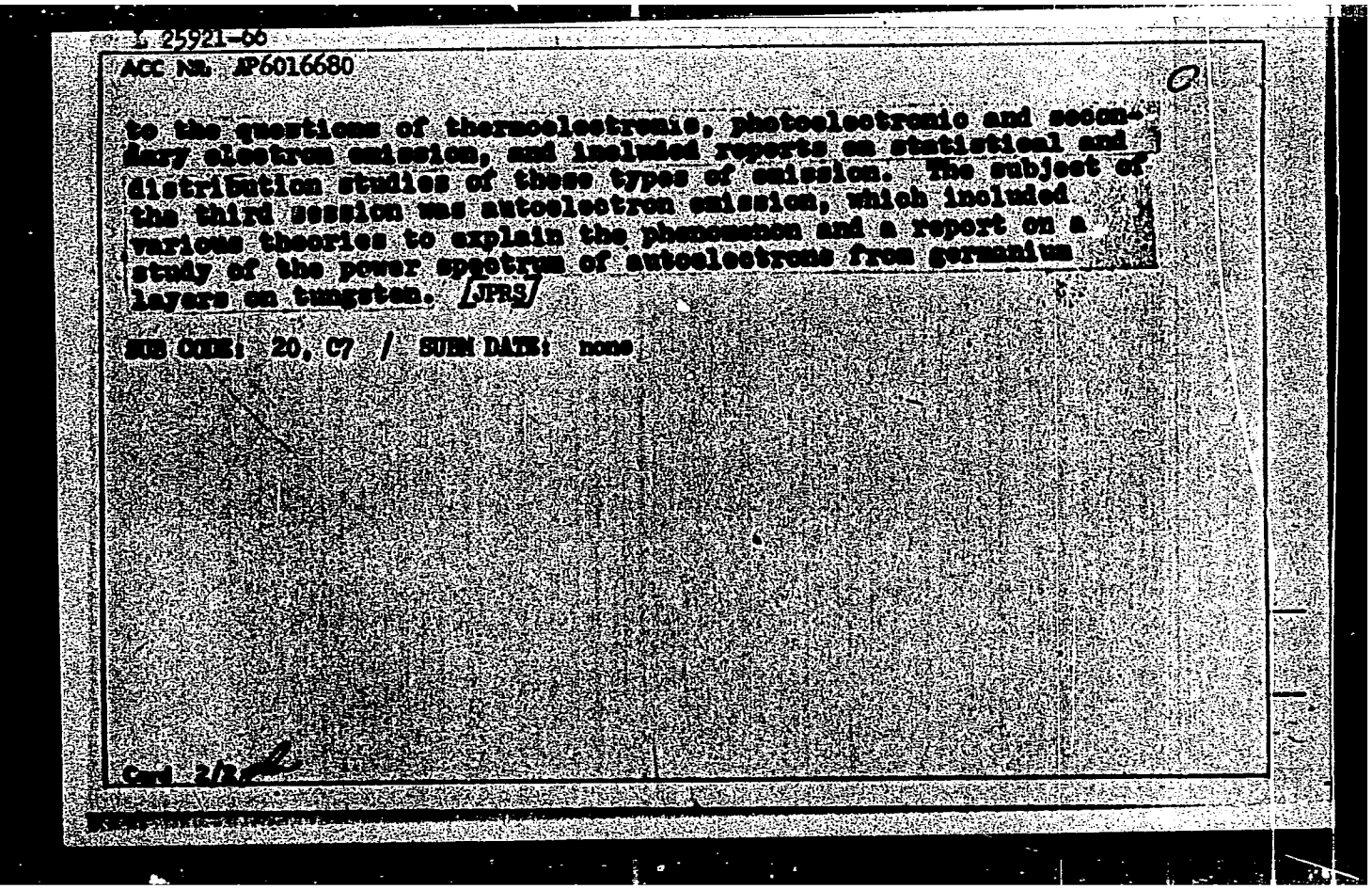
TITLE: Second Scientific Session of the Scientific Council on Physical Electronics

SOURCE: Radiotekhnika i elektronika, v. 10, no. 6, 1965, 1164-1166

TOPIC TAGS: physics conference, chemisorption, adsorption, semiconductor device, secondary electron emission, photoelectric property, thermoelectric property

ABSTRACT: The second session of the conference on physical electronics was held 23-24 Nov 1964, with 142 delegates from 41 organizations in attendance to hear 18 reports in 3 sessions. The first session was dedicated to the question of chemisorbtion of various gases on the surfaces of solids and questions of emission and antiemission coatings. The properties of chemical adsorbtion, as well as the influence of chemical adsorbtion on the operation of semiconductors and the structure of adsorbed films on crystals. Another reporter noted that the antiemission property of gold appears to take place only in the system gold-barium, not with barium oxide. The second session was dedicated

Card 1/2 UDC: 061.3: 621.38:53



L 25921-66
ACC NR: AP6016680

to the questions of thermoelectronic, photoelectronic and secondary electron emission, and included reports on statistical and distribution studies of these types of emission. The subject of the third session was autoelectron emission, which included various theories to explain the phenomenon and a report on a study of the power spectrum of autoelectrons from germanium layers on tungsten. [JPRS]

SUB CODE: 20, 07 / SUBM DATE: none

Card 2/2

L 45916-66 EWT(m)/EWP(w)/T/EWP(t)/ETI IJP(c) JD

ACC NR: AP6028619 SOURCE CODE: UR/0057/66/036/008/1449/1458

AUTHOR: Dobretsov,L.N.; Matskevich, T.L.

ORG: Physicotechnical Institute im. A.F.Ioffe, AN SSSR, Leningrad (Fiziko-tekhnicheskiy institut AN SSSR)

TITLE: Concerning the work functions of metals

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 8, 1966, 1449-1458

TOPIC TAGS: work function, transition element, metal, METAL FILM

ABSTRACT: This paper is a polemic against the views concerning the work function of metals held by G.V.Samsonov and his associates and expounded by them in a series of papers beginning in 1957, the most recent of which appears in the present issue of the Journal (ZhTF, 36, 1435, 1966 /see Abstract AP6028618/). The work function is carefully defined and its relation to the contact potential is explained. Experiments with films deposited on different substrates show that in the case of metals it is the first few molecular layers at the surface that determine the work function, although hundreds or thousands of molecular layers may be involved in the case of semiconductors. The authors admit that with the aid of a perfected theory (which is not in sight at present) one should be able in principle to calculate the work function of a pure material from the properties of its atoms, but they doubt that simple scalar properties would suffice for the purpose. The concepts presented by Samsonov et al, and their

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L 45916-66
ACC NR: AP6028619

presentation of them, are criticized for lack of clarity. Samsonov et al. have not been sufficiently critical of the experimental data when comparing their conclusions with them: data from diverse sources obtained by different methods are uncritically compared (some of the measurements were made as long ago as 1906); the Richardson work function has been employed when the total emission current work function would be more appropriate; and sometimes "recommended" values of the work function have been cited instead of the experimental data themselves. Even the data as cited by Samsonov et al. do not always support the conclusions that they draw from them, and a critical examination of the most reliable work function data reveals no support for any of their conclusions. It is concluded that there is no support of any kind, theoretical or experimental, for the thesis of Samsonov et al. that the work function is mainly determined by the bulk properties of the material. The authors thank M.V.Gomoyunova for her active participation in discussions of the paper. Orig. art. has: 2 formulas, 2 figures and 1 table.

SUB CODE: 20 SUBM DATE: 06Jan66 ORIG. REF: 031 OTH REF: 013

Card 2/2 mjs

MATSKEVICH, T.S., insh.

Checking the stability of jointed chairs. Der. prom. 7 no.8:13-15 Ag '58. (MIRA 11:9)

1. TSentral'nyy nauchno-issledovatel'skiy institut fanery i mebeli. (Chairs)

KOBLIKOVA, A.G., kand.tekhn.nauk; MATSKEVICH, T.S., insh.

Pressing furniture parts and subassemblies from wood shavings.
Der.prom. 8 no.12:1-4 D '59. (MIRA 13:5)

1. TSentral'nyy nauchno-issledovatel'skiy institut fanery i mebeli.
(Wood, Compressed) (Furniture)